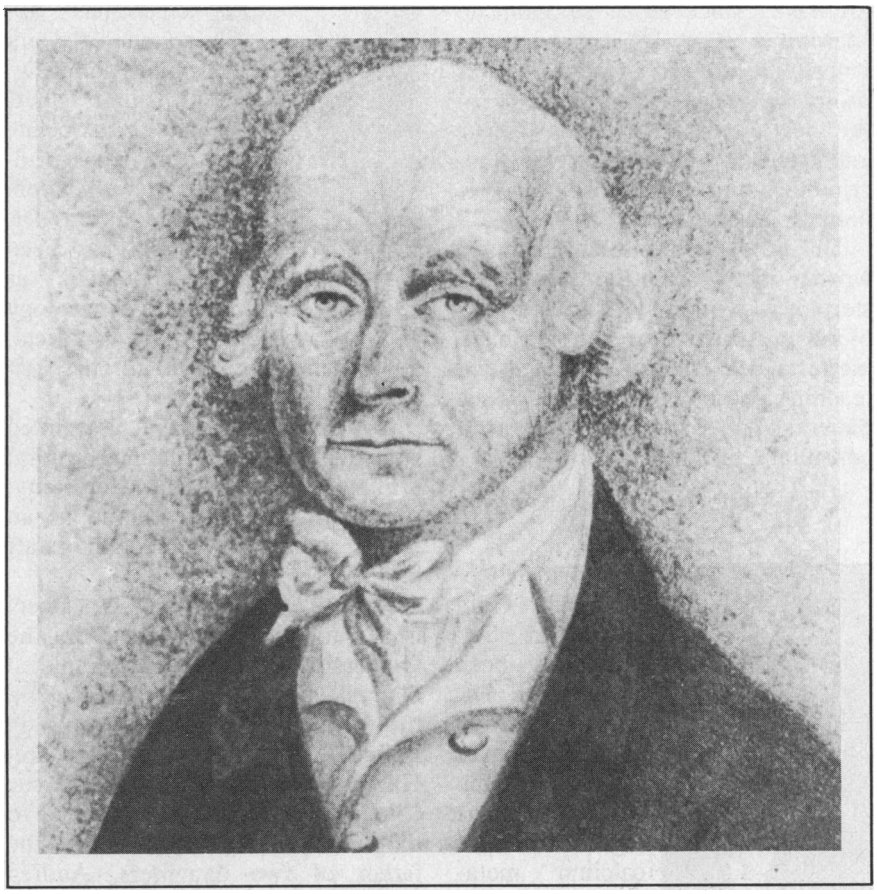
Dr. James Tytler: author, balloonist, encyclopedist

WILLIAM E. SWINTON

"Life", said Emerson, "is a series of surprises", and some surprises cause a change of plan. Thus the arrival on my desk of a beautifully rebound, but otherwise original copy of James Tytler's "A Treatise on the Plague and Yellow Fever" suggested that a few words on this remarkable man might not be amiss. The book was published at Salem, Massachusetts, in 1799 and its author remains almost unknown.

James Tytler was born at Fearn, a small cluster of houses 11.2 km east of Brechin, in Forfarshire, Scotland, on Dec. 17, 1745. Today a road runs past the church and the place is called Fern: the county is now called Angus, but the hills, or braes, are still there to the north and west and Cruick Water runs by.

The stirring days of the '45 are long over and the children of the minister of the little church are long forgotten. Like many of the people of the parishes they must have struggled to emigrate. James was the fourth child and could have no advantages in the manse, for the family was growing too; but his father was a Latin scholar and the little household had books, so the boy was well provided in the scholastics of the time and was omnivorous in his reading. At a very early age he went to Aberdeen University but was dissuaded from the ministry by his father.



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Instead he was apprenticed to a Dr. Ogilvie at Forfar, about 14.4 km south of the manse, sometime around 1761 when he was 16. There is no record of his work or medical experience in that capacity but he may have compounded mixtures, run errands and reported on patients to his master. What is more of a mystery is how he managed to save or raise the money to go, some 2 years later, to the medical classes of Edinburgh, already famous as a medical school. However, there he did go, to live and learn in the smoky air of Auld Reekie and walk along its perilous streets, (for the rubbish of the households and high-rises was thrown out upon the pathways).

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How he studied, what examinations he passed cannot now be recounted, but the Royal Infirmary was there (its new buildings opened in 1738) and the great names in the university were William Cullen, Alexander Monro, the founder of an anatomical dynasty, and John Rutherford, the professor of medicine.

Like many other Edinburgh medical students and young graduates, he signed up in summer, for adventure and income, as surgeon in a whaling ship. His ship is known to have been the *Royal Bounty*, of Leith, 331 tons, that went that summer of 1765 to the Arctic seas around Spitsbergen and returned in August with a modest catch.

There was plenty of time to prepare for the new medical term in November, but, another kind of adventure led him astray. On Oct. 27 of that same year, when he was nearly 20, he was married to Elizabeth Rattray, daughter of a former solicitor in Edinburgh (or perhaps Perth, which is not very far away). Marriage calls for money and maintenance, things that were never to be characteristic of James Tytler; so instead of spending money on medical classes, he started to practise as a doctor. There were, however, doctors enough in Edinburgh, so by raising some money from somebody or somewhere, he opened an apothecary's shop in Leith.

The shop failed, partly because of lack of custom but also partly due to its owner's lack of attention to the business. Being a financial failure has never been very acceptable in Edinburgh and he and his wife were compelled to run away to try to survive in Berwick and Newcastle. There is a gap in their history for the next 7 years in which he seems to have made the minimum of money and almost the maximum of children, for 5 were born and raised during this unhappy period.

In 1772 they all returned to the environs of Edinburgh where his sins may well have been forgotten rather than forgiven, for though they settled down at Restalrig, just north-east of the town, Tytler now began a new and important phase of his life by becoming a writer, and must frequently have had to visit booksellers in Edinburgh itself.

It was an important time in the history of Scotland's capital, for a new surge in writing and in literary interest had begun. It was the time of Hume, Adam Smith and of the new university intellectuals, many of whom were medically qualified, if not in practice.

Tytler was hardly of their class, for while he started many things he had not, apparently, the means or the perseverance to see them through. This was not lack of interest or lack of something to say, as he could display amply on occasion, but a general fecklessness that affected his own life and his family affairs as well. Robert Burns knew him and has described him as a "mortal who trudges about Edinburgh as a common printer, with leaky shoes, a sky-lighted hat, and knee breeches as unlike as George-by-the-Grace-of-God and Solomon-the-son-of-David. Yet that same unknown drunken mortal is author and composer of three-fourths of Elliot's pompous Encyclopedia Britannica." Like many of his fellow countrymen Tytler was out of

patience at times with the sectarians as well as the religious leaders of the time and was his own kind of moralist, opposed to David Hume. He did not disguise his dislikes, and since he was an able writer, his views were noticed.

From Restalrig, he started in 1773 *The Gentleman's and Lady's Magazine*, a weekly of 32 pages which survived for about 13 weeks. This covered all sorts of general topics, was well written and shows a temporary industry and application that only those who have edited a journal can appreciate. The first number is dated January 1774. In that year he wrote *Essays on the most important Articles of Natural and Revealed Religion*, an anti-sceptical work that was also abandoned.

How much he made from these attempts as a writer can be judged from the fact that he decided by late 1774 or early 1775 to seek the refuge of the debtors in the Precincts of Holyrood Abbey. This recognized haven was no narrow tract of land, but covered much of what are now suburbs of the city and Arthur's Seat, so that exercise on a grand scale was granted to the unfortunates who paid two guineas to be registered and admitted. Since summonses to appear in court were not effective on Sundays, the debtors could emerge on that day and socialize or otherwise sustain their day provided they were back through the gate by midnight. The fact is important, for now Tytler settled down to sustained labour that must have required more access to booksellers, printers and libraries than seems possible under the sanctuary rules. However, his stay as an "Abbey Laird", as the debtors were dubbed, was apparently not long, but long enough for his poor wife, no doubt exhausted mentally and physically by the demands of growing children, constant movement to unhappy lodgings, and an inconsiderate husband, to decide in 1775 to leave him. This she did, never to return, leaving the children with him. Tytler had other partners later, and probably another 3 children by two cohabiters, but he does not seem to have been legally married again.

His entry into sanctuary is recorded in the books as "James Tytler, Chymist in Leith, last in Restalrig, resides in Mrs. Riddells". It appears that he did not remain long within the precincts on this occasion for he is found a little later in Duddingston, on the south-eastern boundary of the sanctuary, with his children, in the home of a washerwoman. His debts may well have been paid by his employers, for he had been commissioned to write the second edition of the "Encyclopaedia Britannica" to be published in parts at 16 shillings a week. This sum, though probably sufficient for a single man, would be insufficient for rent, board and incidentals for a man and 5 or 6 children, but Tytler was not one to look ahead.

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It was at Duddingston, apparently, that he constructed a printing press on which he was to produce a great deal of work in an acceptable form. It seems odd that he could do this, while being content to use the upturned tub of his washerwoman landlady as the desk for the monumental task of writing the encyclopedia.

The first edition, in three volumes, was produced, according to its title page, "by a Society of Gentlemen in Scotland", but was, in fact, produced by one man, a printer, William Smellie. Tytler, not to be outdone, wrote the second edition over 7 years, publishing the first number on June 21, 1777 and the 101st, the last, on Sept. 18, 1784. The printed volumes are dated 1778-1783, and comprise 8595 pages and 340 plates.

While Tytler undoubtedly reprinted, polished, or updated some of Smellie's articles, a vast number of new articles and biographies were produced by him alone, including such scientific treatises as Astronomy (100 pages); Botany (35); Chemistry (92) and Medicine (300). What is more, they seem to be reliable summaries of the ideas of the time. History, religion, and all the other things were dealt with equally well. The modern edition of the encyclopedia records, "James Tytler M.A. (*sic*) Compiler". The degree would appear to be gratuitous or an invention of the printers.

One essay that was autobiographical was *Whaling*. By any standard this was a remarkable piece of work, and it is clear that to sustain his family, the author had to provide and print other articles at the same time. For example, in 1780 he had begun the *Weekly Mirror*, a 12-page commentary on the times that was printed professionally in Edinburgh. The first number came out in September 1780, but it finished publication forever in March 1781. Like a pretentious *History* that he envisaged earlier, it was a one-volume effort, and Tytler does not seem to have been able to keep things going on his own. He wrote occasionally for the newspapers, he tried poetry, not very successfully, and he published some translations of Virgil, but though they all demonstrated his remarkable learning, none came to anything.

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The idea was not original, for there had been much discussion in Europe of the possibility that men could be transported by balloons filled with either hot air or hydrogen. In 1783 the brothers Montgolfier, who were papermakers near Lyons in France, made a cloth balloon, filled it with hot air, and at

Versailles, on Sept. 19, 1783, made the first passenger flight. The passengers were not men, however, but a cock, a duck and a sheep who soared some 1500 feet and landed safely about 3.2 km away. Posterity has never given the three pioneers their due, but the Montgolfiers continued their experiments and trials, and others in France also improved their product until it became clear that, in France, the balloon, hot-aired or with hydrogen, was a practical method of travel.

The English were not too pleased at such progress abroad and Tytler came to his decision as a result of editing the last volume of the Encyclopedia Britannica". In the final appendix he enlarged on his earlier article on *Air* by writing on air balloons. He had the French experience at hand and the increasingly popular hobby of sending up toy balloons in England. His final assessment was prophetic: "By this invention, the schemes of transporting people through the atmosphere, formerly thought chimerical, are realized; and it is impossible to say how far the art of aerial navigation may be improved, or with what advantages it may be attended."

Naturally he wanted to be involved and he proceeded with his project. He advertised for subscribers and in order to encourage them to pay, as well as promise, and to titillate the local imagination, he promised to exhibit a fire-balloon (as a model of the one in which he intended "to attempt the Navigation of the Atmosphere") on Mon., June 21, 1784, at Comely Garden. The model balloon was 3.9 m in circumference, large enough to astonish those who paid sixpense to enter the garden, yet small enough to be hardly visible to those non-paying spectators outside the walled and tree-ringed enclosure.

The garden was a pleasure park that was sheltered from the west winds of Edinburgh and the balloon was held down by strings, though there is no record of how high it went during the demonstrations. Whatever the result, financial or otherwise, it was enough to provoke the intended balloonist and he began the preparation of his large balloon. Where or how he did this early stage is not known. He had little money and he must have needed some professional help to construct it. No plans remain of it, but an admission ticket to the event: — The Edinburgh Fire Balloon By J. Tytler. Price 3 Shillings — signed by the balloonist, is in the (Sir Joseph) Barks Collection of the British Museum. This shows a barrel-shaped arrangement of considerable size, presumably of cloth, confined and strengthened by vertical and horizontal ropes, and with a small canoe-like basket underneath containing the stove that provided the hot air. Only one account of its size had been given, from the observation made on Mon. July 19, 1784 when the structure was exhibited and filled with air in the spacious, uncompleted cupola of the Register Office that still stands, now completed, near the Waverley Station.

Here in the windowless structure, sheltered from the winds along the Castle rock, the balloon stood 12 m high and 9 m wide. The experiment was not, of course, a success.

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Some of the cloth caught fire and holes appeared in the fabric. However, on Mon., Aug. 2, at Comely Garden and all that week, the balloon was exhibited to subscribers with the ticket already described. Alas, wind and weather decided the issue. The mooring mast broke, the furnace failed, the balloon became uncontrollable and the projected flight on the Friday evening, Aug. 6 had to be abandoned. The press notices were not encouraging. On the Saturday evening, when the wind had calmed, Tytler started to enter the basket when a sudden gust of wind again wrecked the experiment and much of the balloon. The spectators were disappointed and some broke the basket. A later attempt was abandoned when the balloon failed to rise. Then on Fri., Aug. 27, 1784, early on a calm morning, the balloon, repaired, the larger stove roaring with an unknown fuel, the balloon and its navigator rose in the air to some 105 m, then slowly descended and landed, as Tytler himself had landed years earlier, near Restalrig. It was not much of a flight but it was the first balloon ascent in Britain. And it has been almost forgotten by history. Five weeks later, on Mon., Oct. 4, James Sadler, a physician, made a successful attempt, from Oxford, to become the first English balloonist.

The next few years were difficult ones, as usual, for the hapless chemist, physician, and balloonist. In every endeavour he was a failure. As a physician he had failed, though his writing shows that he kept up with the literature and theories of treatment; as a chemist, he was unfortunate for he invented a method of preparing magnesia, but was eased out of the business and the profits; and now as a balloonist he had failed to satisfy his fellow citizens. He is also reported to have dabbled with a perpetual motion machine which was doomed to failure whoever worked on it. He left Edinburgh and went to Glasgow where he started *The Observer*, a weekly newspaper that lasted 26 weeks. He was soon back in Edinburgh and in trouble.

His wife, Elizabeth Rattray, had left him in 1775, but she was still his wife. He had had companions and children since then, and was cohabiting with Jean Aitkenhead and their identical twin girls in 1788 when his wife brought an action for divorce. The summons was served toward the end of January and alleged, quite rightly, that James had committed adultery with two, named, women. Elizabeth asked for damages and her legal expenses. The decree was not given until a year later and in the meantime Tytler, who could ill afford any expense, had fled to Berwick and was thus outside Scotland and its legal system. For the next 3 years nothing is known of him.

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Early in 1791 Tytler was back in Edinburgh and was writing again. By now almost all of Scotland was intensely interested in the spirit of revolution that was abroad in Europe and particularly in France. The Scots called it reform but the enthusiasts were occasionally violent, with riots and strikes. Even sober, or perhaps moderate, individuals, like Robert Burns, were enthusiastic enough to send contributions to the French Revolution.

This was the very kind of atmosphere to inspire Tytler to inappropriate literary comment. In 1792 he joined a moderate society, The Society of Friends of the People, a majority of whom found that they could tolerate the government. Tytler had started a monthly periodical, *The Historical Register*, in July 1791, that cost 6d. and dealt with current affairs, particularly those of Edinburgh, as it bore the subtitle of the *Edinburgh Monthly Intelligencer*. In this he supported the advanced views, that coincided with the minority opinion of the Society, and, as if this were not enough, he published a *Pamphlet on the Excise* which was highly critical. Unfortunately, to prove his points, he singled out individuals for criticism, and later his *Handbill addressed to the People and Their Friends* advised "the People" to consider themselves enemies of the despots and aristocrats in the government. This outburst was published at a time when the sheriffs of Scotland had been told to take note of seditious writings; so James Tytler was arrested. He was released on bail, on a security of £33.6.8, that was raised by his old printer, and trial was set for Jan. 7, 1793, another fateful Monday. But when that day dawned and his name was called, he was gone, this time across the sea.

Edinburgh is only about 80 km from Glasgow, which was the gateway to the west in the 18th century, and Tytler probably had little difficulty in getting to Ireland, perhaps Belfast. He left his wife (as she may then have been) and the twins but they later joined him in Ireland. Wherever he was, the omniscient author was "ghosting" a three-volume work on surgery, for an Edinburgh surgeon. He finished the work and, characteristically, got no payment for it. The work is said to have been published. He raised some money, however, by a 40-page pamphlet, "A Dissertation on the Origin and Antiquity of the Scottish Nation", which was published in London. The proceeds would not be much, but apparently enough to buy a steerage passage for the family in a brig sailing to Salem, Massachusetts. This small ship must have provided only the basics for Atlantic travel, but the family probably found it as good as anything they were accustomed to. Tytler whiled away the tedium of a summer voyage by writing a poem, but he also seems to have made acquaintance with people who were to prove useful to him later, emigrants though they were.

Landed in the New World, the old problems reasserted themselves. But here no one knew his back-

ground or his history, so he could start afresh, living in a very small house, remote but accessible to the town along a sandy spit. The location was famous for its clams, which Jean collected for a much needed addition to their diet. The twins were placed in an agreeable family, presumably as servants.

Tytler compounded drugs, did some chemical work and wrote for the *Gazette*, one of the town's two papers. Part of his chemical projects was the creation of salt pans to provide salt for ships. The pans had little success and were destroyed in a storm in 1798.

He had long been interested in medicine, history and geography, so now he combined his talents and wrote "A Treatise on the Plague and Yellow Fever", "with an appendix containing histories of the plague at Athens in the time of the Peloponnesian War; at Constantinople in the time of Justinian; at London in 1665; at Marseilles in 1730 etc." He describes himself on the title page as "Compiler of the Medical Part of the Encyclopaedia Britannica". It was published in Salem in 1799.

His industry, even his prolixity, has to be admired. Sitting, in mean circumstances on the other side of the world, without the kind of libraries to which he was accustomed, he wrote 544 pages of the main book and there are 24 closely printed pages in small type in the appendix. He must have had no personal experience of either of the diseases in his title, but he discusses their antiquity, their mentions in the Bible, the geographical and climatic influences and the "Moral Conduct of the Human Race in producing and influencing the Plague" in the first part and the similarities and differences between the two fevers in part II. Each part also deals with prevention and cure. He discusses all sorts of physiologic subjects in the rambling text, but the book shows a remarkable interest in all of these things.

There is no question that James Tytler had many of the qualities of a great man but they were seldom put together in any task. The work is a remarkable conclusion to a remarkably unhappy life, that of an 18th century Sisyphus ever pushing his intellectual stone up the hills of lands that were alien, at least to him. The last year of his life was spent writing a "Universal Geography" at twelve-and-a-half cents a day.

Whatever rewards these works may have brought him, he ended his days in poverty and he now drank more than was good for him. One blustery Sunday night in January he struggled along the narrow strip to Salem to borrow a candle. This being given to him, he started on his inebriated way to the desolate home where his wife awaited him. He had forgotten, temporarily, the geographic fact that tides rise, as well as fall, and that winds can blow with exceeding force. He never reached home. On Mon., Jan. 9, 1804, his body was found. His grief-stricken wife fainted with shock, and probably malnutrition, but was looked after by her hastily summoned children. After a brief inquest James Tytler was laid to rest, aged 58. Public sympathy helped the widow for a time, and she practised the preparation of medicines that she had learned from her beloved but unreliable spouse. On Mon., Jan. 2, 1834, she died in the almshouse, "the highly respected widow of Dr. James Tytler". ■

CMAJ retrospect

"They say that no man is a hero to his valet and I would add that it is not essential that one must have met a man to appreciate his worth and to revere him in the gallery of heroes. These reflections are occasioned by the recent writings of two medical colleagues who elaborated their thoughts on heroes and how they attain that status. . . .

I have been asking myself about my own short list of persons who have so excited my admiration that their defects and frailties are submerged in the heroic aura which they create. Most of them are figures of history whose accomplishments, no less than their characters, have made a lasting impression and who have influenced me." — *CMAJ*, November 1968